

What is claimed is:

1. An image signal decoding apparatus having a main storage division used for controlling the entire image signal decoding apparatus, a dedicated storage division used for an motion
5 compensation process in decoding of an image signal, and a motion compensation processing division for performing the motion compensation process to the image signal,

wherein: said main storage division has a frame storage division for storing frame data for performing the motion
10 compensation process;

said dedicated storage division stores, of the frame data stored in said frame storage division, the frame data of a predetermined address highly likely to be referred to in the motion compensation process; and

15 said motion compensation processing division performs the motion compensation process by referring to the frame data stored in said dedicated storage division.

2. The image signal decoding apparatus according to claim
20 1,

wherein said dedicated storage division stores the frame data of 80 lines close to the line including the frame data to which the motion compensation process is performed.

- 25 3. The image signal decoding apparatus according to claim 1,

wherein said dedicated storage division stores the frame data of 48 lines close to the line including the frame data to which the motion compensation process is performed.

- 5 4. The image signal decoding apparatus according to any one of claims 1 to 3,

 wherein, each time the motion compensation process is finished for the frame data of 16 lines, said dedicated storage division reads from said frame storage division the data of
10 predetermined 16 lines to be used for the subsequent motion compensation process.

5. The image signal decoding apparatus according to any one of claims 1 to 4,

15 wherein said dedicated storage division can supply the stored frame data to the motion compensation processing division and a continuous decoding division for performing a continuous decoding process.

- 20 6. The image signal decoding apparatus according to claim 5,

 wherein the process in said continuous decoding division includes a post filter process for alleviating distortion of the data.

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7. The image signal decoding apparatus according to any one of claims 1 to 6,

wherein said motion compensation processing division has an address administration division for administering the address of the frame data stored in said dedicated storage division; and

5 in the case where the frame data of the address referred to by said motion compensation processing division is not stored in said dedicated storage division, said address administration division reads the frame data stored in said frame storage division to said motion compensation processing
10 division, and said motion compensation processing division performs the motion compensation process by referring to the read frame data.

8. The image signal decoding apparatus according to any one
15 of claims 1 to 7,

 wherein said frame storage division has a first and a second storage divisions capable of storing the frame data of one frame respectively, and said first storage division stores processing results outputted by said motion
20 compensation processing division, and said second storage division stores the frame data for performing the motion compensation process.

9. The image signal decoding apparatus according to any one
25 of claims 1 to 7,

 wherein said frame storage division stores the frame data of one frame and overwrites the processing results outputted

by said motion compensation processing division to the corresponding address of the stored frame data.

10. The image signal decoding apparatus according to claim
5 9,

wherein, in the case where said motion compensation processing division needs to refer to the frame data stored at the predetermined address in said frame storage division not overwritten with the processing results of said motion
10 compensation processing division, said address administration division has the frame data referred to.

11. The image signal decoding apparatus according to claim
9 or 10,

15 wherein, in the case where said motion compensation processing division needs to refer to the frame data not stored in the frame storage division, said address administration division has a predetermined error compensation process that is defined performed.

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12. The image signal decoding apparatus according to claim
9 or 10,

wherein said main storage division stores DC (Direct Current) component data of the frame data of a forward reference
25 frame referred to for the motion compensation process, and in the case where said motion compensation processing division needs to refer to the frame data stored in the frame storage

division, said address administration division has the frame data referred to, and has the error compensation process performed by referring to said DC component data in the case where said motion compensation processing division needs to refer to the frame data not stored in the frame storage division.

13. The image signal decoding apparatus according to claim 9 or 10,

wherein said main storage division stores sub-sample data generated from the frame data of the forward reference frame referred for the motion compensation process, and

in the case where said motion compensation processing division needs to refer to the frame data stored in the frame storage division, said address administration division has the frame data referred to, and has the error compensation process performed by referring to said sub-sample data in the case where said motion compensation processing division needs to refer to the frame data not stored in the frame storage division.